

Perception of Learners on Electronic Examination in Open and Distance Learning Institutions: A Case Study of National Open University of Nigeria

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In mid-2009, the NOUN (National Open University of Nigeria) reached the decision to shift from conventional (that is, pen-and-paper) examination to electronic examination in the conduct of the end of semester examinations. One of the major factors prompting this decision is the inability of the university to release the results of past examinations promptly and error-free and a fact that gives the university a bad reputation. With the use of descriptive research design, the study investigated the perception of learners about electronic examination before and after their participation on e-examination. Three questions were raised which were turned to hypotheses. The findings revealed a difference in the perception of learners on e-examination prior and after their participations on e-examination with favor for e-examination.

Keywords: formal education, quality issues, online assessment

Introduction

As a worldwide phenomenon, ODE (open and distance education) has also become an acceptable mode of education in Africa and particularly in Nigeria (Adekanmbi, 2004). As far back as 1977, the idea of an open university has already reflected in the National Policy on Education which stated that: "Maximum efforts will be made to enable those who can benefit from higher education to be given access to it. Such access may be through universities or correspondence courses, or open universities, or part-time and work study programme" (FRN (Federal Republic of Nigeria), 1977, p. 6). It was this policy statement that paved way for the NOU (National Open University), the forerunner of the NOUN (National Open University of Nigeria). After a prolonged debate in the National Assembly, an act establishing the Open University of Nigeria was passed. The NOU was formally established on July 22, 1983, but before it could take off, the act was suspended via a budgetary pronouncement made by General Muhammadu Buhari, the then military head of state, on April 25, 1984, after the military junta took over (Blueprint, 2002). However, in 2002, another democratically elected government which had assumed power in 1999 removed the suspension and the university started with the name NOUN which started with four schools and later added another one making five to date. The schools are: SASS (School of Arts and Social Sciences), SBHRM (School of Business and Human Resources Management), SEDU (School of Education), SOL (School of Law) and SST (School of Science and Technology). Apart from

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the schools, there is a centre called Centre for Lifelong Learning and Workplace Training dedicated to undertake the Certificate Programmes and other skills training. Each school is headed by a Dean who is a professor (except for SASS and SBHRM that have Associate Professor as Dean) and various programmes are headed by programme leaders who are either associate professors or senior lecturers and are responsible to the Dean of their various schools. There are also course coordinators and assistant course coordinators in the schools who are responsible for the coordination of the courses in the various programmes and they are responsible to the programme leaders.

The main academic activities of the students take place at the study centers that are spread across the countries. As at the time of the writing of this paper, NOUN has 39 study centers all over Nigeria. The study centers are under the leadership of a study centre manager (who is expected to be a professor, except for a handful that is manned by associate professors or chief student counselors that are on the grade of directors). Facilitations and examinations are held at the study centers.

Since the inception of the university, the conduct of examinations as well as the process of producing results has been fraught with various problems leading to inability to release results on time, inability of some students to get their results and several incomplete results. These problems have become embarrassing to the university. In one of the students' bid to complaint, a newspaper was used to air their views, and this was the comment, "Other challenges they highlighted include delay in the release of examination results failure to graduate undergraduate students since inception and many others" (Aborisade, 2010, p. 8).

It has to be stated, however, that these problems are not entirely the fault of the university as the students also contribute immensely to these problems. These factors range from the failure of the students to write the TMA (tutor-marked assignments) (that is, cumulative assessment) and the university's result software was designed in such a way that a student without TMA score cannot have a result even if the student pass the examination very well; the use of mobile phone numbers in place of matriculation numbers, thus, making the students' grades untraceable. It is the problems associated with conventional method of writing examination that make the university to come up with the resolution of conducting the university's examination with the electronic model. It is believed that would put an end to the inability to release results, failure to conduct more than one examination in a year and other problems faced during the conduct of examinations.

However, before this decision was taken, the Senate of the university had to grapple with serious issues including the preparedness of the students to face electronic examination. Unfortunately, however, throughout the discussion of the Senate on this issue, one feels that there is no scientific approach to the gauging of the students' perception on this issue, hence, the resolve to embark on this research.

NOUN in the year 2009 announced her intention to commence e-examination. As Ayo, Akinyemi, Adebisi, and Ekong (2007) have rightly indicated:

The advent of Web applications into the computing technology has brought about a significant revolution in our social life including the traditional system of education and examination. Many institutions are beginning to reevaluate their traditional methods and have considered providing pedagogical materials through the Internet. (p. 125)

This trend has also led to so many research works on e-examination as well as Web-based studies, not only in Nigeria, but also globally, such as the works of Yuan, Zhang, and Zhan (2003), Jackson and Usher (1997) and Bridgeman, Goodrich, Kobourvo, and Tamassia (2000). It has to be stated, however, that most of these researches have focused on the development of Web-based testing and assessment, especially the construction of questions

of equal weight and randomization of items on individual's test papers. One area that has been overlooked mostly is the perceptions of the students that are the subjects of this type of examination.

To be able to elicit students' perceptions, three research questions were raised—Is there a difference between the mean response of the pre- and post- perception of students on the acceptance of e-examination? Is there a difference between the mean response of the pre- and post- perception of students on the likely problems of e-examination? Do the students prefer e-examination to pen-and-paper examination? These questions were turned into three hypotheses—There is no significant difference between the mean of pre- and post- perception of students on the acceptance of e-examination; There is no significant difference between the mean response of the pre- and post- perception of students on the likely problems of e-examination; The students do not show any preference for either pen-and-paper examination or e-examination.

This study is aimed at evaluating the perception of the students of NOUN on the e-examination. It is believed that at the end of this paper, the students' view of e-examination would be made known and it would be a good reference point for other open and distance institutions especially in the developing countries where the use of the computer may not be comprehensive among all the students population. Also, the findings would be found useful to planners and managers of ODL (open and distance learning), especially towards a plan of a new ODL institution.

E-Examination

Ayo et al. (2007) defined e-examination as a system that “involves the conduct of examinations through the web or the intranet” (p. 126). Though the definition of Wikipedia is that of e-assessment, it is related to e-examination. E-assessment in its broadest sense is the use of information technology for any assessment related activity. The origin of e-examination would naturally be traced to the further deployment of the potentials of the internet and the intranet. El Emary & Abu (2006) stated that:

As schools around the world establish connections to the Internet and teachers and students gain proficiency with navigating through the vast quantity of readily available information, the true educational potential of the World Wide Web can finally begin to be understood. The Web can be a dynamic tool capable of assisting educators in propelling learning exciting and competing levels and of bringing education to any students, anywhere, at any time. (p. 1715)

One of the potentials of the Web is the ability to conduct examination through electronic means. Many scholars have hinted on the advantages of the deployment of e-examination. Awosiyan (2010), quoting Prof. Olu Jegede, the Vice-Chancellor of NOUN, said that:

E-examination was introduced to address series of anomalies being encountered in the manual tests. He said that the e-examination would remove all human errors recorded in manual examination and create opportunity for students to access their results immediately.... With this, we have removed so many hiccups in the compilation of answer scripts and movement of examination papers from one part of the country to another. The examination is conducted now through the net.” ... it would be difficult for students to carry out any form of examination malpractice. (p. 10)

From the above statement, the advantages of e-examination can be said as follows:

- (1) Removal of human errors involved in the process of examination;
- (2) The eradication of the compilation and physical movement of examination scripts, especially in the NOUN where we had to exchange examination scripts among the 39 study centers to avoid the halo effect and guarantee the quality of the assessment;
- (3) It would also eradicate examination malpractice from the part of the students.

Apart from this, with the deployment of this system, many students who had had to defer examinations because they are not at their study centre during the period of examination had the opportunity to write at the closest study centre venue to where they are at the time of examination. Ayo et al. (2007) also said that e-examination reduces the large proportion of workload on examination, training, grading and reviewing, thus, bringing the ability for the institution to release examination results in record time. This is because where the lecturer would spend weeks marking scripts manually, the computer would grade the students as soon as they finish their papers.

Methodology

By the structure of NOUN, it operates through various study centers that are scattered across the country. As of now, the university has 39 study centers. Under normal conditions, the stratified random sampling would have been used, so that we could have a good representative of the geographical spread. However, being the most populous study centre in the country coupled with the fact that the city of Lagos, being the former capital of the country, is highly exposed, the Lagos Study Centre was picked as a case study for the research. By the time of the commencement of this research, Lagos Study Centre has a total population of 6,000 students. Six hundred students were sampled, representing 10% of the total population of the students which is deemed by the researchers as being representative of the whole population.

The research instrument was developed to elicit students' response on the use of e-examination. The instrument went through validation by other scholars and reliability test before it was administered on the students. The test-re-test reliability method was used. A pilot study was carried out by using 20 students from Benin Study Centre. The main study took place in two stages: the pre-examination administration and the post-examination administration. Out of the 600 students that were given questionnaires for the pre- and post-study, only 459 were returned that were used for the analysis.

The student *t*-test statistic was used to test hypotheses 1 and 2, while the Chi-square statistic was used to test hypothesis 3. They were tested at the alpha level of 0.05.

Analysis

H₀₁: There Is No Significant Difference Between the Mean of Pre- and Post- Perception of Students on the Acceptance of E-examination

Table 1

Two-tailed T-test of Difference Between Means of Pre- and Post- Perception of Students on the Acceptance of E-examination

	Mean	St. deviation	<i>n</i>	Standard Error	<i>t</i> -cal	<i>t</i> -crit
Pre	3.2	0.5	459	0.1	29.5	2.2
Post	2.7	0.6	459			

Notes. *t*-cal: calculated *t*; *t*-crit: critical *t*.

In Table 1, calculated *t* is 29.5 and the critical or table *t* is 2.2. Since the calculated *t* is higher than the critical *t* value, the null hypothesis 1 (H₀₁) will be rejected. In conclusion, it could be said that there was a difference in the perception of students on e-examination prior and after the examination on the acceptance of e-examination.

H₀₂: There Is No Significant Difference Between the Mean Response of The Pre- and Post- Perception of Students on the Likely Problems of E-examination

Table 2

Two-tailed T-test of Difference Between the Mean Response of the Pre- and Post- Perception of Students on the Likely Problems of E-examination

	Mean	St. deviation	n	Standard error	t-cal	t-crit
Pre	3	0.2	459	0.1	4.4	2.8
Post	2.3	0.3	459			

Notes. t-cal: calculated t; t-crit: critical t.

The calculated t value in Table 2 is 4.4 and the critical t value is 2.8. The calculated t value is higher than the table or critical t value, therefore, null hypothesis 2 (H_{02}) is rejected. It could be said, therefore, that there was a difference in the perception of students on the likely problems with e-examination at the pre- and post-responses.

H₀₃: The Students Do Not Show Any Preference for Either Pen-and-Paper Examination or E-examination

Table 3

Examination Type Preference of 459 Students in NOUN

Examination type preference	
Pen-and-paper	E-examination
177	282

Table 4

Observed and Expected Frequencies of Examination Preference of 459 Students

Examination preference	Observed frequency	Expected frequency
Pen-and-paper	177	229.5
E-examination	282	229.5

The calculated chi-square value is 14 and the critical chi-square value is 3.84. Since the calculated value is higher than the critical value, the null hypothesis 3 (H_{03}) is rejected. This implied that there was a difference in the students' preference.

Discussion

To further identify where the differences of the students perception lies, Tukey Post Hoc analysis was carried out, which revealed that the difference of students perception lies on reduction of examination malpractice, wide coverage of the scheme of work, students' academic performances, age factor to the use of IT (information technology) and inadequate facilities.

The post perception had more support to the use of e-examination, which the students perceived that it will help to reduce examination malpractices. This support reflects in Table 3, where 282 supported the use of e-examination as against 177. This also conforms to the views of Olu Jegede (as cited in Awosiyan, 2010) that e-examination would help to reduce examination malpractice. Students' academic performances are likely to improve, since the students are likely to be more committed to their studies with the view that there might not be opportunity to cheat in examination, and also because of fewer distractions in the examination hall, they are

likely to have more concentration. Since the students know that questions would cover almost every aspect of the scheme, there is the tendency for them to study more.

Student age was observed to be a likely problem in the use of e-examination since the students at age 35 and above find it difficult to acquaint them with the use of IT. Difference was also observed on inadequate facilities, that inadequate facilities may hinder the success of e-examination.

Conclusions and Recommendation

The nature of ODL requires a more vibrant mode of conducting an examination. From the findings in this study, it could be said that the use of e-examination should be encouraged across all distance institutions, since it would help to reduce examination malpractice, increase students' academic performance, have wide coverage of the scheme of work and enhance prompt release of students' academic results. These are found to be major problems associated with pen-and-paper examination.

In view of this, the following recommendations were made:

- (1) To help students in the use of IT, especially the older students, workshops should be organized for students. This can be done through video conferencing with the use of headquarter as the base;
- (2) The institutions should work towards having its facilities for the e-examinations, especially the personal computers. This can be achieved by sensitizing the public for its needs. The centers with very high student enrolment should be concentrated on first before others.

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